

Monthly Maintenance

Tim Pearson, Compliance Inspector

Because regulations make tank owners and operators responsible for preventing releases to the environment, a monthly check of equipment and records is a good idea. Monthly checks can spot potential problems early and help owners stay ahead of the game. In their monthly checks, owners and operators should look to see if equipment is operating correctly. They should note if the site has changed and ensure that records are being kept the way they should be.

Here are some suggestions for monthly operations and maintenance checks:

1. Look at the equipment.
 - a. Open the dispensers and check for leaks. Look to see that the shear valves are properly anchored under the dispensers if you have a pressurized line system.
 - b. Look at the spill buckets. Are there any cracks or loose gaskets? Open the fill caps to see if the drop tubes are still there and, if appropriate, the drop tube shut off valves are in place.
 - c. Open any other tank top man ways and take a look at what is there. Make sure any caps (such as vapor recovery or ATG riser caps) are on and secure.
 - d. If there are sumps, open them. Is there water or product in the sump? If so, remove it and properly dispose of it. Then investigate to find where it came from.

- e. Check the vent lines if they are not in the canopy. Are the rain caps still on? Have trees grown up around them? (If so, the trees may need to be trimmed.)
 - f. Is the automatic tank gauge working? Are there any alarms that need to be investigated/ reported?
 - g. If appropriate, ensure the impressed current system rectifier is on and operating.
2. Check the paperwork.
 - a. There should be monthly leak detection results as well as the most recent tank or line testing results.
 - b. Corrosion protection monitoring and testing records should be available.
 - c. The financial responsibility form and the current registration certificate should be readily available.

Checking the various parts of the underground storage tank system on a regular basis will increase the likelihood of finding any problems early. So, spend a little time each month and check out that UST facility. As Mr. Franklin said, "An ounce of prevention is worth a pound of cure."

GOODBYE 1-800; HELLO DIRECT DIAL

Communications technology, especially the almost universal use of cellular phones and voice mail by our customers, has overtaken the need for the Program to subscribe to a 1-800 service.

Beginning immediately, customers are encouraged to call their UST contacts directly and to use the voice mailbox if the contact is not immediately available. The most current list of phone numbers for Program personnel is in this issue. We'll update this list on a regular basis.

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Why do I need to sample for all this stuff?

Debra Thoma, Assessment and Corrective Action Division

Frequently, underground storage tank owners and cleanup contractors ask why the Underground Storage Tank Program wants water from monitoring wells tested for Nitrate, Sulfate, Ferrous Iron, Dissolved Oxygen, and Methane (i.e. the inorganic parameters). After all, Benzene, Toluene, Ethylbenzene, Xylenes, Naphthalene, Methyl-tert Butyl Ether (MtBE), and Ethylene Dibromide (EDB) are the contaminants most often associated with petroleum. But the information provided by inorganic sampling can mean the difference between having to take corrective action (at increased costs) and letting nature take its course.

The “letting nature takes its course” method (monitored natural attenuation) refers to cleaning up the site through biodegradation. Biodegradation is carried out by living creatures known as microorganisms. Under the right conditions, microorganisms can cause or assist chemical reactions that change the form of contaminants like Benzene and its relatives so that little or no health risk remains.

The inorganic parameters analyzed are called “indicators of biodegradation”. Each one tells us something different about what is happening underground. For example, a high hydrocarbon concentration and a low dissolved

oxygen concentration could indicate that microorganisms are active and using the oxygen as it comes into the area. But oxygen isn’t the only indicator that biodegradation is occurring. Once the oxygen is used up, the microorganisms will use other inorganic compounds. Because the natural system is ever-changing, sampling may be needed on a periodic basis. Sampling gives us a better picture of how well nature is reducing contamination levels and helps us determine if we need to intervene. Gathering an accurate picture of the potential receptors at or near the contamination is also part of the monitored natural attenuation process. The article on page 3 explains how this works.

Dear Tank Doctor

My automatic tank gauge has so many alarms, I’m tempted to ignore them all. What do they all mean?

First of all, please don’t ignore the alarms. Automatic tank gauges (ATG) use alarms to alert the owner/operator to unusual operating conditions, release detection information or tank gauge system failures. Although ATGs may be set up differently based on model or type, most often they have three types of alarms: system alarms, tank alarms, and sensor alarms.

System alarms are about equipment failures or program malfunctions. Minor alarms such as “paper out” and more important alarms such as a “no probe” (no information from the probe in a particular tank) are examples. System alarms could also include critical alarms like the “leak” alarm that comes when data from the probe indicates the tank is leaking. System alarms require action—replacing paper, installing a new probe, or testing the tank or piping to

determine if a leak is real. Someone familiar with the system and testing procedures should check out the system immediately and do testing or repairs as necessary. System alarms also might let you know a tank has failed a test, such as “leak test: failed, leak test: increase, or test failure.” Any of these, or other alarms that indicate unusual operating conditions or that a release may be occurring should be reported to the UST Program within 72 hours.

Tank alarms are usually related to inventory and water levels. When the ATG was set up, warning levels were programmed in. Tank alarms warn you if the tank is getting too full (high limit or overfill alarm) or too empty (low limit or delivery needed). There is also an alarm to let you know if there is water in with the fuel (water limit alarm). Tank alarms may be the first clue an owner has that the tank system is not performing properly

(water entering the tank through tank top) or that outside forces (a delivery that caused the tank to be overfull) have affected the tank. Tank owners should investigate each alarm to determine the root cause and change procedures as needed to protect the system.

Sensor alarms are tied to sensors in different parts of the tank system. There may be sensors between the “walls” of a double wall tank that will cause an alarm if there is liquid where there is not supposed to be any or if the liquid level changes in a brine-filled interstice (liquid detected, high or low brine, or water detected alarms). Other sensors may be in pump or dispenser sumps and will cause an alarm if there is liquid in those spaces (fuel alarm or sump full). If you ever have a question about what an alarm means, call the Tank Doctor at (803) 896-6844 or e-mail us at UST_HELP@dhec.sc.gov.

ASTs

Leslie Yasinsac, Compliance Inspector

Keeping an underground storage tank system in compliance can be taxing and costly. Many tank owners have looked into replacing that underground tank with an aboveground storage tank (AST). There might be certain benefits to having an AST instead of a UST. For example, there are currently no state registration fees for ASTs, and there will be no inspector coming every year (or more often) to check paperwork and equipment. However, owning and operating ASTs come with certain responsibilities. Outlined below are some of the major considerations.

Scaled plans for the renovation or construction of a service station that uses aboveground storage of flammable or combustible liquids must be submitted to the state fire marshal or his designee for approval before construction begins. There is a limit to the total amount of fuel

that can be stored at one facility, as well as a per-tank limit. There are separation requirements from occupied buildings, dispensers, fill ports, and property lines. Service stations with ASTs that store flammable or combustible liquids must have public liability insurance. Aboveground storage of flammable or combustible liquids at service stations is prohibited in municipalities with a population of 25,000 people or greater. To obtain more information about submitting a plan for ASTs or to locate the fire marshal's local designee, call the state fire marshal at (803) 896-9800.

In addition to fire and life safety requirements for ASTs, there are also federal rules that apply. The most pertinent one relates to oil pollution prevention. This regulation covers any facility with a total aboveground fuel storage capacity greater than 1,320 gallons or underground storage capacity greater than 42,000 gallons. It also

applies to facilities where a release would likely go into navigable waters. These facilities must prepare and implement a Spill Prevention, Control, and Countermeasures (SPCC) plan. This plan must be certified by a licensed engineer and include measures for containing a spill; testing tanks, piping, and valves; plans regarding the manpower needed to contain and remove any contamination; and employee training.

Other factors at issue with ASTs include protecting the tank from physical damage due to vandalism, accident or extreme weather such as a tornado or hurricane.

So, as you consider moving your operations above ground, please remember that there are safety, fire and operating concerns as well as compliance and reporting requirements for ASTs also.

Receptor Surveys Part 1: The Value of an Accurate Receptor Survey

Susan Block, Assessment and Corrective Action Division

The Underground Storage Tank Program uses risk evaluation and computer modeling to assess the threat a petroleum release poses to human health and the environment. Accurately identifying potential receptors within 1,000 feet of the release is one of the more critical factors in this process. Receptors can be water supply wells, streams, rivers, ponds, lakes, wetlands, utilities, and basements—essentially anything that soil, liquid or vapor contamination could impact. There can be several potential receptors for one release.

Based on the potential threat to a receptor, eligible releases are rank-ordered for funding from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Releases that have impacted a receptor (such as vapors

in a basement or chemicals of concern in a water supply well) are high priority and receive the first available funds. A release where the threat to receptors is low will receive SUPERB funding after the higher priorities have been addressed.

The distance from the release to the receptor is used in a computer model along with other site-specific information from the release assessment to help determine the clean up priority at the site. The output of the model shows the project manager what levels of contamination could exist at the site without impacting the receptor. These are called the Site-Specific Target Levels (SSTLs). If the actual concentrations onsite are at or below the SSTLs, then the release is a candidate for monitored natural attenuation (see the article

on page 2 for more information on natural attenuation). If the measured concentrations exceed the SSTLs, active corrective action is necessary to reduce the levels to the established target level.

For example, if a monitoring well (MW-1) located 300 feet from a stream contains 3,000 mg/L benzene and the calculated SSTL is 500 mg/L benzene for MW-1, then active corrective action is necessary to reduce the level of benzene to or below 500 mg/L at MW-1. This information drives not only the ranking of releases for funding but also could influence the type of clean up used.

In the next edition of UST News, find out what information should be included in a thorough receptor survey.

NEW Federal UST Law

Extracted from Latest Leaks (newsletter from the Missouri PST Insurance Fund)

Tucked into the 1,700-page "Energy Bill" recently passed by Congress are several provisions relating to underground storage tanks. Space does not allow a full review of all the UST provisions, but we've listed a few. The bill:

- Requires the Environmental Protection Agency and states to develop a way of publicly identifying non-compliant USTs and prohibits delivery of fuel to such tanks;
- Requires the EPA and states to establish training requirements for all personnel involved in UST operations;
- Requires states to either enact a law requiring manufacturers and installers of USTs to have insurance to pay for leaks caused by faulty

work, or enact a law requiring new USTs within 1,000 feet of a drinking water well to be double-walled;

- Renews and extends the federal Leaking Underground Storage tax of \$0.001 per gallon to September 11, 2011, and expands the allowable uses of the money; and
- Requires states to inspect operating USTs at least once every three years.

There are deadlines for these and other requirements, and in most cases, the EPA is required to publish guidelines or rules to implement the provisions. So watch for more information in the coming months.

EDITORS' NOTE:

The UST Program will ask stakeholders and the public for ideas and comments on how to best approach and implement these requirements in South Carolina.



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